

## - 1 -



96

## SEQUENCE LISTING

<110> Fletcher, Jonathan A. Kroll, Todd G.

<120> PAX8-PPARgamma NUCLEIC ACID MOLECULES
AND POLYPEPTIDES AND USES THEREOF

<130> B0801/7196/ERP/MAT

<140> US 09/765,111

<141> 2001-01-18

<150> US 60/177,109

<151> 2000-01-20

<150> US 60/225,079

<151> 2000-08-14

<160> 47

<170> FastSEQ for Windows Version 3.0

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<211> 2334

<212> DNA

<213> Homo Sapiens

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<221> CDS

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1 5 10 15

gga ggg gcc ttt gtg aat ggc aga cct ctg ccg gaa gtg gtc cgc cag Gly Gly Ala Phe Val Asn Gly Arg Pro Leu Pro Glu Val Val Arg Gln 20 25 30

cgc atc gta gac ctg gcc cac cag ggt gta agg ccc tgc gac atc tct

144

Arg Ile Val Asp Leu Ala His Gln Gly Val Arg Pro Cys Asp Ile Ser

35

40

45

cgc cag ctc cgc gtc agc cat ggc tgc gtc agc aag atc ctt ggc agg
Arg Gln Leu Arg Val Ser His Gly Cys Val Ser Lys Ile Leu Gly Arg
50 55 60

tac tac gag act ggc agc atc cgg cct gga gtg ata ggg ggc tcc aag

Tyr Tyr Glu Thr Gly Ser Ile Arg Pro Gly Val Ile Gly Gly Ser Lys

65 70 75 80





ccc Pro	aag Lys	gtg Val	gcc Ala	acc Thr 85	ccc Pro	aag Lys	gtg Val	gtg Val	gag Glu 90	aag Lys	att Ile	GJÀ ààà	gac Asp	tac Tyr 95	aaa Lys	288
cgc Arg	cag Gln	aac Asn	cct Pro 100	acc Thr	atg Met	ttt Phe	gcc Ala	tgg Trp 105	gag Glu	atc Ile	cga Arg	gac Asp	cgg Arg 110	ctc Leu	ctg Leu	336
gct Ala	gag Glu	ggc Gly 115	gtc Val	tgt Cys	gac Asp	aat Asn	gac Asp 120	act Thr	gtg Val	ccc Pro	agt Ser	gtc Val 125	agc Ser	tcc Ser	att Ile	384
aat Asn	aga Arg 130	atc Ile	atc Ile	cgg Arg	acc Thr	aaa Lys 135	gtg Val	cag Gln	caa Gln	cca Pro	ttc Phe 140	aac Asn	ctc Leu	cct Pro	atg Met	432
gac Asp 145	Ser	tgc Cys	gtg Val	gcc Ala	acc Thr 150	aag Lys	tcc Ser	ctg Leu	agt Ser	ccc Pro 155	gga Gly	cac His	acg Thr	ctg Leu	atc Ile 160	480
ccc Pro	agc Ser	tca Ser	gct Ala	gta Val 165	act Thr	ccc Pro	ccg Pro	gag Glu	tca Ser 170	ccc Pro	cag Gln	tcg Ser	gat Asp	tcc Ser 175	ctg Leu	528
Gly	ser	Thr	Tyr 180	Ser	Ile	Asn	Gly	Leu 185	Leu	GLY	TIE	gct Ala	190	PLO	GIY	576
Ser	Asp	195	Arg	Lys	Met	Asp	200	Ser	. Asp	GI.n	Asp	agc Ser 205	Cys	arg	Бец	624
Ser	210	a As <u>r</u>	Ser	Gln	. Ser	Ser 215	Ser	: Ser	Gly	Pro	220	) 1 ràs	HIS	Leu	. cgc . Arg	672
Th: 22!	c As <u>r</u> 5	) Alá	a Phe	e Ser	230	n His	: His	s Leu	ı Glu	235	Let	ı Glu	. Cys	Pro	ttt Phe 240	720
Glı	ı Arg	g Glı	n His	245	r Pro	Glu	ı Ala	а Туі	250	a Sei	r Pro	o Ser	HIS	255		768
Gl	y Gl	u Gl	n Gly 260	y Lei O	а Туз	r Pro	) Le	u Pro 26!	o Lei 5	ı Leı	ı Ası	n Sei	270	) L rei	g gac 1 Asp	816
As	p Gl	у Lу 27	s Ala 5	a Th:	r Lei	u Th:	r Pr 28	o Se: O	r Ası	n Th:	r Pr	o Let 28!	1 GT	y Ar	c aac g Asn	
ct Le	c tc u Se 29	r Th	t ca r Hi	c ca s Gl:	g ac n Th	c ta r Ty: 29	r Pr	c gt o Va	g gt l Va	g gca	a ga a Gl 30	u Me	g aco	c atom	g gtt t Val	912





_			-		_					gly aaa	_	_			960
_			_		_	~				ttt Phe	-		_		1008
			_	~			_			cca Pro			_	_	1056
				_				 	_	gat Asp		-			1104
										gtg Val 380					1152
										aat Asn					1200
										cgt Arg					1248
	_									tgt Cys					1296
										atc Ile					1344
			_	90				_	-	aat Asn 460		_	_		1392
										tct Ser					1440
~~				~		_	_	 _		aag Lys	_	_		_	1488
		_	_		_		_			tcc Ser	_	-		-	1536
_	_	_			_					aag Lys					1584



		-	_	-	agg Arg						_			_		1632
					tat Tyr 550											1680
		_			cac His				_	-		_	_			1728
					ttt Phe											1776
					gag Glu											1824
	~	_		~	caa Gln	_						~ ~	_			1872
				_	ctg Leu 630	_						_				1920
		-			ggc Gly		_						_	_	<del></del>	1968
_	-				gac Asp		_	_				-				2016
_			-	_	gaa Glu		_	_		_	_	-		_	_	2064
_	_				agt Ser		_	_			-	_			_	2112
		_	_		caa Gln 710	_					_	_			_	2160
	_	_			cct Pro				_	_		-	-	-		2208
		_		~	ctc Leu	_	_			-	_			_		2256











ctg cag gtg atc aag aag acg gag aca gac atg agt ctt cac ccg ctc 2304 Leu Gln Val Ile Lys Lys Thr Glu Thr Asp Met Ser Leu His Pro Leu 755 760 765

ctg cag gag atc tac aag gac ttg tac tag
Leu Gln Glu Ile Tyr Lys Asp Leu Tyr \*
770 775

2334

<210> 2 <211> 777 <212> PRT <213> Homo Sapiens

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				325					330					335	
Phe	Thr	Thr	Val 340	Asp	Phe	Ser	Ser	Ile 345	Ser	Thr	Pro	His	Tyr 350	Glu	Asp
Ile	Pro	Phe 355	Thr	Arg	Thr	Asp	Pro 360	Val	Val	Ala	Asp	Tyr 365	Lys	Tyr	Asp
Leu	Lys 370	Leu	Gln	Glu	Tyr	Gln 375	Ser	Ala	Ile	Lys	Val 380	Glu	Pro	Ala	Ser
Pro 385	Pro	Tyr	Tyr	Ser	Glu 390	Lys	Thr	Gln	Leu	Tyr 395	Asn	Lys	Pro	His	Glu 400
Glu	Pro	Ser	Asn	Ser 405	Leu	Met	Ala	Ile	Glu 410	Cys	Arg	Val	Cys	Gly 415	Asp
		Ser	420					425					430		
		Phe 435					440					445			
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465	_	Phe		-	470					475					480
_		Gly	_	485					490					495	
		Ser	500		_			505					510		
		Ala 515	_				520					525			
	530	Ala				535					540				
545		Phe			550					555					560
		Lys		565					570					575	
		Ile	580				_	585			_		590		
		Glu 595					600					605			
	610	Leu				615					620				
625		Tyr			630					635					640
		Glu		645					650					655	
		Pro	660					665					670		
_		Asn 675					680	_		_		685			
	690	Ile				695					700				
705		Glu			710					715					720
		Leu		725					730					735	
	_		740			_		745					750		Leu
Leu	Gln	Val 755	Ile	Lys	Lys	Thr	Glu 760	Thr	Asp	Met	Ser	Leu 765	His	Pro	Leu
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		acc Thr												576
_	-	aag Lys 195	-											624
-		gac Asp												672
		gcc Ala												720
_		cag Gln												768
		cag Gln												816
		aag Lys 275												864
		act Thr												912
_	_	ata Ile	_	_	_		 ~		-		_			960
	_	tct Ser			_	_	_	_	_	_				1008
		gtc Val				-								1056
000	_	ttc Phe 355			_			_	_			_	_	1104
	_	atg Met											_	1152





								tct Ser								1248
								gtt Val 425								1296
								atc Ile								1344
								ctc Leu								1392
								gaa Glu								1440
								cat His								1488
								aag Lys 505								1536
								agt Ser								1584
								gly aaa								1632
								aag Lys								1680
Ser	Ser	Asp	Ile	Asp 565	Gln	Leu	Asn	cca Pro	Glu 570	Ser	Ala	Asp	Leu	Arg 575	Ala	1728
								tac Tyr 585								1776
Lys	Ala	Lys 595	Ala	Arg	Ala	Ile	Leu 600	aca Thr	Gly	Lys	Thr	Thr 605	Asp	Lys	Ser	1824
								tcc Ser								1872





	_							~	_		cag Gln	_				Ē	1920
-		-			-		-	_		_	tcc Ser	-		_		Ξ	1968
_						-		-			ggt Gly		-			2	2016
-											gga Gly					2	2064
			_	_	_		_	_			gat Asp 700				_	2	2112
											cta Leu					2	2160
_				~		_			_		gag Glu				-	2	2208
		_		-							gca Ala					2	2256
_				_		_	-			_	ctg Leu		-	_		2	2304
Ile	Glu 770	Asp	Ile	Gln	Asp	Asn 775	Leu	Leu	Gln	Ala	ctg Leu 780	Glu	Leu	Gln	Leu	2	2352
_											gcc Ala					2	2400
	_		_		_				_	-	cac His		_			2	2448
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375

Leu Ser Val Met Glu Asp His Ser His Ser Phe Asp Ile Lys Pro Phe





205					200					205					400
385	Thr	77-7	Asp	Dho	390	Gar	Tla	Car	Thr	395 Bro	Ti a	Тугт	Gl 11	7 an	400
TIL	TILL	vai	App	405	DCI	DCI	110	DCI	410	110	111.5	1 Y 1	Olu	415	110
Pro	Phe	Thr	Arg		Asp	Pro	Val	Val		Asp	Tvr	Lvs	Tvr		Leu
			420					425			<b>4</b> -		430	1.	
Lys	Leu	Gln	Glu	Tyr	Gln	Ser	Ala	Ile	Lys	Val	Glu	Pro	Ala	Ser	Pro
-		435					440					445			
Pro	Tyr	Tyr	Ser	Glu	Lys	Thr	${\tt Gln}$	Leu	Tyr	Asn	Lys	Pro	His	Glu	Glu
	450					455					460				
Pro	Ser	Asn	Ser	Leu	Met	Ala	Ile	Glu	Cys	Arg	Val	Cys	Gly	Asp	_
465		_			470					475				_	480
Ala	Ser	Gly	Phe		Tyr	GТĀ	Val	His		Cys	GLu	GТУ	Cys		GIY
Dho	Dha	7	70 70 07	485	тла	7\	T 011	Tira	490	TIO	TT 770	7\ <120	7. 2007	495	7\ cro
Pne	PIIE	Arg	Arg 500	TIIT	116	Arg	Бец	БУS 505	цец	TTE	тУт	Asp	510	Сув	АБР
T.en	Δsn	Czzg	Arg	Tle	His	Lvs	Lvs		Ara	Asn	Lvs	Cvs		Tvr	Cvs
пси	21011	515	ur 9		11110	шус	520	501	*** 9	11011	цуb	525	0111	- 7 -	C <sub>I</sub> D
Ara	Phe		Lys	Cvs	Leu	Ala		Glv	Met	Ser	His		Ala	Ile	Arq
3	530		-1-	- 2		535		2			540				
Phe		Arg	Met	Pro	Gln	Ala	Glu	Lys	Glu	Lys	Leu	Leu	Ala	Glu	Ile
545	_				550					555					560
Ser	Ser	Asp	Ile	Asp	Gln	Leu	Asn	Pro	Glu	Ser	Ala	Asp	Leu	Arg	Ala
				565					570					575	
Leu	Ala	Lys	His	Leu	Tyr	Asp	Ser		Ile	Lys	Ser	Phe		Leu	Thr
	_		580		_	_		585		_			590	_	
Lys	Ala	_	Ala	Arg	Ala	Ile		Thr	GLY	Lys	Thr		Asp	Lys	Ser
D	m1	595	T1.	///- *no	7) ~~	N/ ~ +-	600	0	т о	Mat	Mot	605	~1··	7\ ~~~	T * * * *
Pro	610	vai	Ile	TAT	Asp	Met 615	ASII	ser	пеп	Mec	620	GTĀ	GIU	Asp	пĀВ
т1Д		Dhe	Lys	иie	Tla		Dro	T.011	Gln	Glu		Ser	Tare	Glu	Va 1
625	пур	FIIC	пур	11.1.13	630	1111	110	пси	04.11	635	0411	UCI	шур	Olu	640
	Ile	Ara	Ile	Phe		Glv	Cvs	Gln	Phe		Ser	Val	Glu	Ala	
				645		- 4	4		650	J				655	
Gln	Glu	Ile	Thr	Glu	Tyr	Ala	Lys	Ser	Ile	Pro	Gly	Phe	Val	Asn	Leu
			660					665					670		
Asp	Leu	Asn	Asp	Gln	Val	Thr	Leu	Leu	Lys	Tyr	Gly	Val	His	Glu	Ile
		675					680					685			
Ile		Thr	Met	Leu	Ala		Leu	Met	Asn	Lys		Glу	Val	Leu	Ile
~	690	~1	~ 3	~7	1- ·	695			<b>~</b> 7	-1	700	-	_	_	_
	Glu	GTA	Gln	GTA	710	мет	Thr	Arg	GLU		ьeu	гÃа	ser	Leu	
705	Dro	Dhe	Gly	7) cm		Mot	Gl 11	Dro	Tare	715 Pho	Glu	Dha	70.1 -	T=1	720 Targ
пуъ	FIO	<u> </u>	GLY	725	FILC	Met	Gra	LIO	730	FIIC	01.4	1110	лта	735	пур
Phe	Asn	Ala	Leu		Leu	Asp	Asp	Ser		Leu	Ala	Ile	Phe		Ala
			740			15-		745	15				750		
Val	Ile	Ile	Leu	Ser	Gly	Asp	Arg	Pro	Gly	Leu	Leu	Asn	Val	Lys	Pro
		755					760		_			765		_	
Ile	Glu	Asp	Ile	Gln	Asp	Asn	Leu	Leu	${\tt Gln}$	Ala	Leu	Glu	Leu	Gln	Leu
	770					775					780				
•••	Leu	Asn	His	Pro		Ser	ser	Gln	Leu		Ala	Lys	Leu	Leu	
785					790		_			795					800
Lys	Met	Thr	Asp		Arg	Gln	Ile	Val		Glu	His	Val	Gln		Leu
<b>⊘</b> 1~	۲7 <u>-</u> ٦	т1.	T * * ~	805	mh -∽	01	mb	7\ <>~	810 Mot	00.5	T 011	TJ d ~	D	815	T ~
GTII	vат	TTG	Lys 820	пув	TIIT.	GIU	1.11L	825	Met	ser	neu	mTB	830	ьеи	цец
Gln	G] 11	Ile	Tyr	Lvs	Asn	Len	Tvr	U2J					030		
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<210> 5 <211> 2625 <212> DNA <213> Homo Sapiens <220> <221> CDS <222> (1)...(2625) <400> 5 atg cct cac aac tcc atc aga tct ggc cat gga ggg ctg aac cag ctg 48 Met Pro His Asn Ser Ile Arg Ser Gly His Gly Gly Leu Asn Gln Leu gga ggg gcc ttt gtg aat ggc aga cct ctg ccg gaa gtg gtc cgc cag 96 Gly Gly Ala Phe Val Asn Gly Arg Pro Leu Pro Glu Val Val Arg Gln ege ate gta gae etg gee eae eag ggt gta agg eee tge gae ate tet 144Arg Ile Val Asp Leu Ala His Gln Gly Val Arg Pro Cys Asp Ile Ser 35 ege cag ete ege gte age cat gge tge gte age aag ate ett gge agg 192 Arg Gln Leu Arg Val Ser His Gly Cys Val Ser Lys Ile Leu Gly Arg tac tac gag act ggc agc atc cgg cct gga gtg ata ggg ggc tcc aag 240 Tyr Tyr Glu Thr Gly Ser Ile Arg Pro Gly Val Ile Gly Gly Ser Lys 288 ccc aag gtg gcc acc ccc aag gtg gtg gag aag att ggg gac tac aaa Pro Lys Val Ala Thr Pro Lys Val Val Glu Lys Ile Gly Asp Tyr Lys cgc cag aac cct acc atg ttt gcc tgg gag atc cga gac cgg ctc ctg 336 Arg Gln Asn Pro Thr Met Phe Ala Trp Glu Ile Arg Asp Arg Leu Leu 100 105 get gag gge gte tgt gae aat gae aet gtg eee agt gte age tee att 384 Ala Glu Gly Val Cys Asp Asn Asp Thr Val Pro Ser Val Ser Ser Ile 115 120 aat aga atc atc cgg acc aaa gtg cag caa cca ttc aac ctc cct atg 432 Asn Arg Ile Ile Arg Thr Lys Val Gln Gln Pro Phe Asn Leu Pro Met 130 135 gac age tge gtg gcc acc aag tcc ctg agt ccc gga cac acg ctg atc 480 Asp Ser Cys Val Ala Thr Lys Ser Leu Ser Pro Gly His Thr Leu Ile 145 150 ccc age tea get gta act ecc eeg gag tea ecc eag teg gat tee etg 528 Pro Ser Ser Ala Val Thr Pro Pro Glu Ser Pro Gln Ser Asp Ser Leu 165 1.70 175



- 14 -





	tcc Ser												576
_	gac Asp	_		_	-	_	_	_	_	_			624
	att Ile 210												672
_	gat Asp												720
	cgg Arg												768
	gag Glu												816
	gl <sup>à</sup> aaa												864
	tcg Ser 290												912
	gcc Ala											acc Thr 320	960
	tgc Cys												1008
	gly aaa												1056
	cag Gln												1104
	acg Thr 370												1152
_	tat Tyr	-		_									1200





-	~	
	_	

gac Asp									1248
gat Asp									1296
ttc Phe		~	~		_				1344
att Ile 450									1392
ctg Leu									1440
cca Pro									1488
gag Glu									1536
aaa Lys									1584
ggt Gly 530									1632
gat Asp									1680
tgt Cys									1728
agg Arg									1776
atc Ile									1824
gcc Ala 610									1872





			gca Ala													1920
			ttc Phe	_				-								1968
			aag Lys 660													2016
			atc Ile													2064
-		_	gag Glu					_								2112
		_	ttg Leu												_	2160
			tac Tyr		_	_	_		-							2208
			gag Glu 740													2256
			cct Pro													2304
			aat Asn												_	2352
	_	_	att Ile			_		_					_			2400
_			gaa Glu	-			_		_			_	_			2448
_	_	_	ctg Leu 820							_	_		-	-	_	2496
	-		atg Met		_		_	_			_				_	2544





cta ctg cag gtg atc aag aag acg gag aca gac atg agt ctt cac ccg
Leu Leu Gln Val Ile Lys Lys Thr Glu Thr Asp Met Ser Leu His Pro
850 855 860

ctc ctg cag gag atc tac aag gac ttg tac tag
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				325					330					335	
Ser	Gly	Val	Pro		Phe	Asn	Ala	Phe		His	Ala	Ala	Ser		Tyr
			340					345					350		
-	Gln	355					360					365			
	Thr 370					375					380				
385	Tyr				390					395					400
	Asp			405					410					415	
	Asp		420				_	425					430		
	Phe	435					440					445			
_	11e 450				-	455					460				
465	Leu	_			470					475					480
	Pro		_	485					490					495	
	Glu		500					505					510		
~	Lys	515		_			520	_				525			
_	Gly 530			_		535					540				
545	Asp			_	550				_	555					560
-	Cys			565					570					575	
	Arg		580					585					590		
	Ile	595		_			600					605			
	610 Thr					615					620				
625	ser	_		_	630					635					640
-	Lys			645		_			650					655	
	Val		660		_			665					670		
	Val	675					680		_			685			
	690 Leu					695			_		700		_		
705	Ile	_			710					715					720
	Ile			725					730					735	
	Arg		740	-		_		745					750	_	
	Lys	755					760	_				765			
v.a.1	دا بر		~	1114		CIU		ي	P	J-0-1	p	Lou			- 110





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770
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                                            780
Ile Ala Val Ile Ile Leu Ser Gly Asp Arg Pro Gly Leu Leu Asn Val
                    790
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Lys Pro Ile Glu Asp Ile Gln Asp Asn Leu Gln Ala Leu Glu Leu
                805
                                    810
Gln Leu Lys Leu Asn His Pro Glu Ser Ser Gln Leu Phe Ala Lys Leu
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                                825
Leu Gln Lys Met Thr Asp Leu Arg Gln Ile Val Thr Glu His Val Gln
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Asp Ile Ser Arg Gln Leu Arg Val Ser His Gly Cys Val Ser Lys Ile

55







					gag Glu											241
					gtg Val											289
					aac Asn											337
					ggc Gly 115											385
					atc Ile											433
					tgc Cys											481
					tca Ser											529
					acc Thr											577
					aag Lys 195											625
Cys	Arg	Leu	Ser	Ile 210	gac Asp	Ser	Gln	Ser	Ser 215	Ser	Ser	Gly	Pro	Arg 220	Lys	673
His	Leu	Arg	Thr 225	Asp	gcc Ala	Phe	Ser	Gln 230	His	His	Leu	Glu	Pro 235	Leu	Glu	721
Cys	Pro	Phe 240	Glu	Arg	cag Gln	His	Tyr 245	Pro	Glu	Ala	Tyr	Ala 250	Ser	Pro	Ser	769
His	Thr 255	Lys	Gly	Glu	cag Gln	Gly 260	Leu	Tyr	Pro	Leu	Pro 265	Leu	Leu	Asn	Ser	817
					aag Lys 275											865



	_	aac Asn		_			-				 	-	-		913
		ccc Pro		_		_		_			 		_		961
_		acc Thr 320						_		_	_		_	~	1009
	_	ggc Gly			_	_				-			-	-	1057
		tac Tyr		_		_		_	_						1105
_		gly ggg		_	_									-	1153
	_	ggc Gly	_		_			_		_	 -		_		1201
	_	tac Tyr 400		~ ~		-									1249
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450

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J	50		J			55		-			60			4	5
Tyr 65	Tyr	Glu	Thr	Gly	Ser 70	Ile	Arg	Pro	Gly	Val 75	Ile	Gly	Gly	Ser	Lys 80
Pro	Lys	Val	Ala	Thr 85	Pro	Lys	Val	Val	Glu 90	Lys	Ile	Gly	Asp	Tyr 95	Lys
Arg	Gln	Asn	Pro 100	Thr	Met	Phe	Ala	Trp 105	Glu	Ile	Arg	Asp	Arg 110	Leu	Leu
Ala	Glu	Gly 115	Val	Cys	Asp	Asn	Asp 120	Thr	Val	Pro	Ser	Val 125	Ser	Ser	Ile
Asn	Arg 130	Ile	Ile	Arg	Thr	Lys 135	Val	Gln	Gln	Pro	Phe 140	Asn	Leu	Pro	Met
Asp 145	Ser	Cys	Val	Ala	Thr 150	Lys	Ser	Leu	Ser	Pro 155	Gly	His	Thr	Leu	Ile 160
Pro	Ser	Ser	Ala	Val 165	Thr	Pro	Pro	Glu	Ser 170	Pro	Gln	Ser	Asp	Ser 175	Leu
Gly	Ser	Thr	Tyr 180	Ser	Ile	Asn	Gly	Leu 185	Leu	Gly	Ile	Ala	Gln 190	Pro	Gly
Ser	Asp	Lys 195	Arg	Lys	Met	Asp	Asp 200	Ser	Asp	Gln	Asp	Ser 205	Cys	Arg	Leu
Ser	Ile 210	Asp	Ser	Gln	Ser	Ser 215	Ser	Ser	Gly	Pro	Arg 220	Lys	His	Leu	Arg
Thr 225	Asp	Ala	Phe	Ser	Gln 230	His	His	Leu	Glu	Pro 235	Leu	Glu	Cys	Pro	Phe 240
Glu	Arg	Gln	His	Tyr 245	Pro	Glu	Ala	Tyr	Ala 250	Ser	Pro	Ser	His	Thr 255	Lys
Gly	Glu	Gln	Gly 260	Leu	Tyr	Pro	Leu	Pro 265	Leu	Leu	Asn	Ser	Thr 270	Leu	Asp
Asp	Gly	Lys 275	Ala	Thr	Leu	Thr	Pro 280	Ser	Asn	Thr	Pro	Leu 285	Gly	Arg	Asn
Leu	Ser 290	Thr	His	Gln	Thr	Tyr 295	Pro	Val	Val	Ala	Asp 300	Pro	His	Ser	Pro
Phe 305	Ala	Ile	Lys	Gln	Glu 310	Thr	Pro	Glu	Val	Ser 315	Ser	Ser	Ser	Ser	Thr 320
Pro	Ser	Ser	Leu	Ser 325	Ser	Ser	Ala	Phe	Leu 330	Asp	Leu	Gln	Gln	Val 335	Gly
Ser	Gly	Val	Pro 340	Pro	Phe	Asn	Ala	Phe 345	Pro	His	Ala	Ala	Ser 350	Val	Tyr
Gly	Gln	Phe 355	Thr	Gly	Gln	Ala	Leu 360	Leu	Ser	Gly	Arg	Glu 365	Met	Val	Gly
Pro	Thr 370	Leu	Pro	Gly	Tyr	Pro 375	Pro	His	Ile	Pro	Thr 380	Ser	Gly	Gln	Gly
Ser 385	Tyr	Ala	Ser	Ser	Ala 390	Ile	Ala	Gly	Met	Val 395	Ala	Gly	Ser	Glu	Tyr 400
Ser	Gly	Asn	Ala	Tyr 405	Gly	His	Thr	Pro	Tyr 410	Ser	Ser	Tyr	Ser	Glu 415	Ala
Trp	Arg	Phe	Pro 420	Asn	Ser	Ser	Leu	Leu 425	Ser	Ser	Pro	Tyr	Tyr 430	Tyr	Ser
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His	Leu 450														

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ata tca caa g Ile Ser Gln G 25	_				
acc aac ttt g Thr Asn Phe G			_		<del></del>
tcc cac tcc t Ser His Ser P	-	_	_	-	
att tot act o Ile Ser Thr P 75	-			-	<del>-</del>
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gca atc aaa g Ala Ile Lys V 105					
cag ctc tac a Gln Leu Tyr A	_				
att gaa tgt c Ile Glu Cys A 1					
gtt cat gct t Val His Ala C 155					
ttg aag ctt a Leu Lys Leu I 170	le Tyr Asp A		Leu Asn Cy		







	_	_			tgt Cys 190	_		_			_		_		_	690
)	223	_			aat Asn	_						-			~	738
					ttg Leu											786
		~ ~		_	gac Asp		~~	~	_	_			-		-	834
			_		ttc Phe		_			-						882
_		~ ~	_		aca Thr 270	_					-			-	_	930
					gga Gly											978
	_	-		_	agc Ser				-							1026
Pro tgc	Leu	Gln	Glu 300 cgc	Gln	-	Lys	Glu gct	Val 305 gtg	Ala	Ile gag	Arg atc	Ile	Phe 310 gag	Gln tat	gcc	1026
tgc Cys	Leu cag Gln	Gln ttt Phe 315 att	Glu 300 cgc Arg	Gln tcc ser	Ser	Lys gag Glu gta	Glu gct Ala 320 aat	Val 305 gtg Val	Ala cag Gln	Ile gag Glu ttg	atc Ile	aca Thr 325	Phe 310 gag Glu caa	Gln tat Tyr	Gly gcc Ala act	
tgc Cys aaa Lys	cag Gln agc ser 330	ttt Phe 315 att Ile	Glu 300 cgc Arg cct Pro	tcc ser ggt Gly	Ser gtg Val	gag Glu gta Val 335	gct Ala 320 aat Asn	Val 305 gtg Val ctt Leu	Ala cag Gln gac Asp	gag Glu ttg Leu	atc Ile aac Asn 340	aca Thr 325 gac Asp	Phe 310 gag Glu caa Gln ctg	tat Tyr gta Val	gcc Ala act Thr	1074
tgc Cys aaa Lys ctc Leu 345	cag Gln agc Ser 330 ctc Leu	Gln ttt Phe 315 att Ile aaa Lys	Glu 300 cgc Arg cct Pro tat Tyr	cln tcc ser ggt Gly gga Gly	ser gtg Val ttt Phe gtc Val	gag Glu gta Val 335 cac His	Glu gct Ala 320 aat Asn gag Glu	Val 305 gtg Val ctt Leu atc Ile	Ala cag Gln gac Asp att Ile	gag Glu ttg Leu tac Tyr 355	atc Ile aac Asn 340 aca Thr	aca Thr 325 gac Asp atg Met	Phe 310 gag Glu caa Gln ctg Leu	tat Tyr gta Val gcc Ala	gcc Ala act Thr tcc Ser 360	1074 1122
tgc Cys aaa Lys ctc Leu 345 ttg Leu	cag Gln agc Ser 330 ctc Leu atg Met	Gln ttt Phe 315 att Ile aaa Lys aat Asn	Glu 300 cgc Arg cct Pro tat Tyr aaa Lys	gln tcc ser ggt Gly gga Gly gat Asp 365 cta	gtg Val ttt Phe gtc Val 350	gag Glu gta Val 335 cac His gtt Val	Glu  gct Ala 320 aat Asn gag Glu ctc Leu ctg	Val 305 gtg Val ctt Leu atc Ile ata Ile	Ala cag Gln gac Asp att Ile tcc ser 370 aag	gag Glu ttg Leu tac Tyr 355 gag Glu	atc Ile aac Asn 340 aca Thr	aca Thr 325 gac Asp atg Met caa Gln ggt	Phe 310 gag Glu caa Gln ctg Leu ggc Gly	tat Tyr gta Val gcc Ala ttc Phe 375	gcc Ala act Thr tcc ser 360 atg Met atg	1074 1122 1170







Sac ago gac ttg gca ata ttt att gct gtc att att ctc agt gga gac   1362																	
Arg Pro Gly Leu Leu Aan Val Lys Pro Ile Glu Asp Ile Gln Asp Asn 445  Ctg cta caa gcc ctg gag ctc cag ctg aag ctg aac cac cct gag tcc Leu Leu Gln Ala Leu Glu Leu Gln Leu Lys Leu Asn His Pro Glu Ser 445  tca cag ctg ttt gcc aag ctg ctc cag aaa atg aca gac ctc aga cag Ser Gln Leu Phe Ala Lys Leu Leu Gln Lys Met Thr Asp Leu Arg Gln 460  At65  At70  att gtc acg gaa cac gtg cag cta ctg cag gtg atc aag aag acg gag Ile Val Thr Glu His Val Gln Leu Leu Gln Val Ile Lys Lys Thr Glu 475  aca gac atg agt ctt cac ccg ctc ctg cag gag atc aca ag gac ttg Thr Asp Met Ser Leu His Pro Leu Leu Gln Glu Ile Tyr Lys Asp Leu 490  tac tag Tyr *  \$\frac{210}{505}\$  \$\frac{210}{212}\$ PRT  \$\frac{211}{212}\$ BOMO Sapiens  \$\frac{400}{35}\$  \$\frac{210}{35}\$ He Glu Met Pro Phe Trp Pro Thr Asn Phe Gly Ile Ser Ser Val Asp Leu Ser Val Met Glu Asp His Ser His Ser Phe Asp Ile Lys Pro 50  Phe Thr Thr Val Asp Phe Ser Ser Ile Ser Thr Pro His Tyr Glu Asp 55  Leu Lys Leu Glu Tyr Gln Ser Ala Ile Glu Cys Arg Val Cys Gly Asp 130  Lys Ala Ser Gly Phe His Tyr Gly Val His Ala Cys Glu Gly Cys Lys 145  Lys Ala Ser Gly Phe His Tyr Gly Val His Ala Cys Glu Gly Cys Lys 145  150  145  145  156  1470  1455  156  1450  1455  146  1458  1455  146  1450  1458  146  1458  1450  1455  146  1450  1455  146  1455  146  1450  1455  146  1450  1451  14		Ser					Phe					Ile					1362
Leu Leu Gln Ala Leu Glu Leu Gln Leu Lys Leu Asn His Pro Glu Ser 445    tca cag ctg ttt gcc aag ctg ctc cag aaa atg aca gac ctc aga cag    Ser Gln Leu Phe Ala Lys Leu Leu Gln Lys Met Thr Asp Leu Arg Gln 460    att gtc acg gaa cac gtg cag cta ctg cag gtg atc aag aag acg gag    Ile Val Thr Glu His Val Gln Leu Leu Gln Val Ile Lys Lys Thr Glu 475    aca gac atg agt ctt cac ccg ctc ctg cag gag atc tac aag gac ttg    Thr Asp Met Ser Leu His Pro Leu Leu Gln Glu Ile Tyr Lys Asp Leu 490    tac tag    Tyr *  505   <pre></pre>	Arg					Asn					Glu					Asn	1410
At gtc acg gaa cac gtg cag cta ctg cag gtg atc aag aag acg gag listed at gtc acg gag cac gtg cac cta ctg cag gtg atc aag aag acg gag listed at level for val Thr Glu His Val Gln Leu Leu Gln Val Ile Lys Lys Thr Glu 485  aca gac atg agt ctt cac ccg ctc ctg cag gag atc tac aag gac ttg fir Asp Met Ser Leu His Pro Leu Leu Gln Glu Ile Tyr Lys Asp Leu 490  tac tag fir *					Leu					Lys					Glu		1458
The Val Thr Glu His Val Gln Leu Leu Gln Val Ile Lys Lys Thr Glu 475				Phe					Gln					Leu			1506
Thr Asp Met Ser Leu His Pro Leu Leu Gln Glu Ile Tyr Lys Asp Leu 490			Thr					Leu					Lys				1554
Tyr * 505		Asp					Pro					Ile					1602
<pre></pre>	Tyr	_															1608
<pre></pre>																	
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Met       Gly       Glu       Thr       Leu       Gly       Asp       Ser       Pro       Ile       Asp       Pro       Glu       Ser       Asp       Ser         Phe       Thr       Asp       Thr       Leu       Ser       Ala       Asn       Ile       Ser       Gln       Glu       Met       Thr       Met       Val         Asp       Thr       Glu       Met       Pro       Phe       Trp       Pro       Thr       Asn       Phe       Gly       Ile       Ser       Ser       Val         Asp       Leu       Ser       Val       Met       Glu       Asp       His       Ser       His       Ser       Phe       Asp       Ile       Lys       Pro         Asp       Leu       Ser       July       Asp       His       Ser       Ile       Ser       Phe       Asp       Ile       Lys       Ile		<2	211>	505													
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1		<2 <2 <2	211> 212> 213>	505 PRT Homo	o Sa <u>r</u>	piens	5										
Asp Thr Glu Met Pro Phe Trp Pro Thr Asn Phe Gly Ile Ser Ser Val 35	Met	<2 <2 <2 <4	211> 212> 213> 400>	505 PRT Homo				Ser	Pro	Tle	Asn	Pro	Glu	Ser	Asn	Sar	
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So	1 Phe	<2 <2 <2 <4 Gly	211> 212> 213> 400> Glu	505 PRT Homo 16 Thr Thr	Leu 5 Leu	Gly Ser	Asp Ala	Asn	Ile 25	10 Ser	Gln	Glu	Met	Thr	15 Met	Val	
Phe         Thr         Thr         Val         Asp         Phe         Ser         Ile         Ser         Thr         Pro         His         Tyr         Glu         Asp           65         70         75         75         80           Ile         Pro         Phe         Thr         Asp         Pro         Val         Asp         Tyr         Lys         Tyr         Asp           Leu         Pro         Pro         Glu         Tyr         Glu         Ser         Ala         Ile         Lys         Val         Glu         Pro         Ala         Ser           Leu         Lys         Lys         Thr         Glu         Lys         Tyr         Asn         Lys         Pro         His         Glu           Pro         Pro         Tyr         Tyr         Ser         Lys         Tyr         Glu         Lys         Tyr         Asn         Lys         Glu         Asp           130         135         135         140         Tyr         Asp         Lys	1 Phe Asp	<2 <2 <2 <4 Gly Thr	211> 212> 213> 400> Glu Asp Glu 35	505 PRT Homo 16 Thr Thr 20 Met	Leu 5 Leu Pro	Gly Ser Phe	Asp Ala Trp	Asn Pro 40	Ile 25 Thr	10 Ser Asn	Gln Phe	Glu Gly	Met Ile 45	Thr 30 Ser	15 Met Ser	Val Val	
Ile       Pro       Phe       Thr       Arg       Thr       Asp       Pro       Val       Ala       Asp       Tyr       Lys       Tyr       Asp       Asp       90       95       95       95       95       95       95       95       96       95       96       95       96       95       96       95       96       95       96       9	1 Phe Asp	<2 <2 <2 Gly Thr Thr	211> 212> 213> 400> Glu Asp Glu 35	505 PRT Homo 16 Thr Thr 20 Met	Leu 5 Leu Pro	Gly Ser Phe	Asp Ala Trp Asp	Asn Pro 40	Ile 25 Thr	10 Ser Asn	Gln Phe	Glu Gly Phe	Met Ile 45	Thr 30 Ser	15 Met Ser	Val Val	
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Pro   Pro   Tyr   Tyr   Ser   Glu   Lys   Thr   Gln   Leu   Tyr   Asn   Lys   Pro   His   Glu	1 Phe Asp Asp Phe 65	<2 <2 <2 Gly Thr Thr Leu 50 Thr	211> 212> 213> 400> Glu Asp Glu 35 Ser	505 PRT Homo 16 Thr Thr 20 Met Val	Leu 5 Leu Pro Met	Gly Ser Phe Glu Phe 70	Asp Ala Trp Asp 55 Ser	Asn Pro 40 His	Ile 25 Thr Ser Ile	10 Ser Asn His	Gln Phe Ser Thr 75	Glu Gly Phe 60 Pro	Met Ile 45 Asp	Thr 30 Ser Ile	15 Met Ser Lys Glu	Val Val Pro Asp	
Pro Pro Tyr Tyr Ser Glu Lys Thr Gln Leu Tyr Asn Lys Pro His Glu  115 120 125  Glu Pro Ser Asn Ser Leu Met Ala Ile Glu Cys Arg Val Cys Gly Asp  130 135 140  Lys Ala Ser Gly Phe His Tyr Gly Val His Ala Cys Glu Gly Cys Lys  145 150 155 160	1 Phe Asp Asp Phe 65	<2 <2 <2 Gly Thr Thr Leu 50 Thr	211> 212> 213> 400> Glu Asp Glu 35 Ser	505 PRT Homo 16 Thr Thr 20 Met Val	Leu 5 Leu Pro Met Asp	Gly Ser Phe Glu Phe 70	Asp Ala Trp Asp 55 Ser	Asn Pro 40 His	Ile 25 Thr Ser Ile	10 Ser Asn His Ser Val	Gln Phe Ser Thr 75	Glu Gly Phe 60 Pro	Met Ile 45 Asp	Thr 30 Ser Ile	15 Met Ser Lys Glu Tyr	Val Val Pro Asp	
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Lys Ala Ser Gly Phe His Tyr Gly Val His Ala Cys Glu Gly Cys Lys 145 150 155 160	1 Phe Asp Asp Phe 65 Ile Leu	Gly Thr Thr Leu 50 Thr Pro	211> 212> 213> 400> Glu Asp Glu 35 Ser Thr Phe Leu	16 Thr 20 Met Val Thr Gln	Leu 5 Leu Pro Met Asp Arg 85 Glu	Gly Ser Phe Glu Phe 70 Thr	Asp Ala Trp Asp 55 Ser Asp Gln	Asn Pro 40 His Ser Pro Ser Thr	Ile 25 Thr Ser Ile Val Ala 105	10 Ser Asn His Ser Val 90 Ile	Gln Phe Ser Thr 75 Ala Lys	Glu Gly Phe 60 Pro Asp Val	Met Ile 45 Asp His Tyr Glu Lys	Thr 30 Ser Ile Tyr Lys Pro 110	15 Met Ser Lys Glu Tyr 95 Ala	Val Val Pro Asp 80 Asp Ser	
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Ser	Pro	Phe 275	Val	Ile	Tyr	Asp	Met 280	Asn	Ser	Leu	Met	Met 285	Gly	Glu	Asp
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Ile Arg Ser Gly His Gly Gly Leu Asn Gln Leu Gly Gly Ala Phe Val	
10 15 20	
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aat ggc aga cct ctg ccg gaa gtg gtc cgc cag cgc atc gta gac ctg	271
Asn Gly Arg Pro Leu Pro Glu Val Val Arg Gln Arg Ile Val Asp Leu	
25 30 35	
and the same and the same and the same are also and the	319
gcc cac cag ggt gta agg ccc tgc gac atc tct cgc cag ctc cgc gtc	コエコ
Ala His Gln Gly Val Arg Pro Cys Asp Ile Ser Arg Gln Leu Arg Val	
40 45 50	



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	-		_					_	_		ccc Pro	-		-	_	655
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-		-	_	_	aat Asn				_	-			-	-	-	1	.807
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625	Ala				630					635					640
Val	Asn	Leu	Asp	Leu 645	Asn	Asp	Gln	Val	Thr 650	Leu	Leu	Lys	Tyr	Gly 655	Val





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Ser	Leu 690	Arg	Lys	Pro	Phe	Gly 695	Asp	Phe	Met	Glu	Pro 700	Lys	Phe	Glu	Phe	
Ala 705		Lys	Phe	Asn	Ala 710	Leu	Glu	Leu	Asp	Asp 715	Ser	Asp	Leu	Ala	Ile 720	
Phe	Ile	Ala	Val	Ile 725	Ile	Leu	Ser	Gly	Asp 730	Arg	Pro	Gly	Leu	Leu 735	Asn	
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tga; agc	agaaq gggc cccga	gga g ctg d	ggaga cagco cctco ggc	eggeo ggegg	gga gg ct	ggg gegg	ggcag agcga	g cgg	cag cccc	gege	ggcc atg Met 1 gga	ccgga cct Pro	cac cac His	aac aac Asr ttt	ggagga tcc Ser 5	120
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atc Ile aat Asn	agaag gggc cccga aga Arg ggc Gly	gga g ctg d agc d tct Ser aga	ggaga cagco cctco ggc Gly cct Pro 25	cat His 10 ctg Leu	gga Gly ccg Pro	ggg Gly gaa Glu	ctg Leu gtg Val	aac Asn gtc Val 30	cag Gln 15 cgc Arg	gcgc ggcg ctg Leu cag Gln	ggcc atg Met 1 gga Gly cgc Arg	ggg Gly atc Ile	gcc Ala gta Val 35	ttt Phe 20 gac Asp	ggagga tcc Ser 5 gtg Val ctg Leu	120 175 223
atc Ile aat Asn gcc Ala	agaag gggccccga aga Arg ggc Gly cac His	tct Ser aga caga Gln	ggaga cagco cctco ggc Gly cct Pro 25 ggt Gly	cat His 10 ctg Leu gta Val	gga Gly ccg Pro agg Arg	ggg Gly gaa Glu ccc Pro	ctg Leu gtg Val tgc Cys 45	aac Asn gtc Val 30 gac Asp	cag Gln 15 cgc Arg	ctg Leu cag Gln tct ser	ggcc atg Met 1 gga Gly cgc Arg	ggg Gly atc Ile cag Gln 50	gcc Ala gta Val 35 ctc Leu gag	ttt Phe 20 gac Asp cgc Arg	ggagga tcc 1 Ser 5 gtg Val ctg Leu gtc Val	120 175 223 271





	_	gtg Val		_	_			_			_	_				463
		gcc Ala														511
_		gac Asp 120		-												559
		gtg Val	_							_	_	_	_		_	607
	_	tcc Ser	_	-					_			_		-		655
		ccg Pro				_	_	_		_	~ ~					703
		eja aaa														751
		gac Asp 200														799
		agc Ser														847
		cac His														895
	_	gcc Ala														943
		ctg Leu		_			_		-	-			_			991
		cct Pro 280														1039
		ccc Pro														1087





gaa acc ccc gag gtg tcc agt tct agc tcc acc cct tgc tct tta tct Glu Thr Pro Glu Val Ser Ser Ser Ser Ser Thr Pro Cys Ser Leu Ser 310 320 325	1135
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cag gcc ctc ctc tca ggg cga gag atg gtg ggg ccc acg ctg ccc gga Gln Ala Leu Leu Ser Gly Arg Glu Met Val Gly Pro Thr Leu Pro Gly 360 365 370	1279
tac cca ccc cac atc ccc acc age gga cag ggc age tat gcc tcc tct Tyr Pro Pro His Ile Pro Thr Ser Gly Gln Gly Ser Tyr Ala Ser Ser 375 380 385	1327
gcc atc gca ggc atg gtg gca gga agt gaa tac tct ggc aat gcc tat Ala Ile Ala Gly Met Val Ala Gly Ser Glu Tyr Ser Gly Asn Ala Tyr 390 395 400 405	1375
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Arg	Ile	Val 35	Asp	Leu	Ala	His	Gln 40	Gly	Val	Arg	Pro	Cys 45	Asp	Ile	Ser
Arg	Gln 50	Leu	Arg	Val	Ser	His 55	Gly	Cys	Val	Ser	Lys 60	Ile	Leu	Gly	Arg
Tyr 65	Tyr	Glu	Thr	Gly	Ser 70	Ile	Arg	Pro	Gly	Val 75	Ile	Gly	Gly	Ser	Lys
Pro	Lys	Val	Ala	Thr 85	Pro	Lys	Val	Val	Glu 90	Lys	Ile	Gly	Asp	Tyr 95	Lys
Arg	Gln	Asn	Pro 100	Thr	Met	Phe	Ala	Trp 105	Glu	Ile	Arg	Asp	Arg 110	Leu	Leu
Ala	Glu	Gly 115	Val	Cys	Asp	Asn	Asp 120	Thr	Val	Pro	Ser	Val 125	Ser	Ser	Ile
Asn	Arg 130	Ile	Ile	Arg	Thr	Lys 135	Val	Gln	Gln	Pro	Phe 140	Asn	Leu	Pro	Met
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Ser	Asp	Lys 195	Arg	Lys	Met	Asp	Asp 200	Ser	Asp	Gln	Asp	Ser 205	Cys	Arg	Leu
Ser	Ile 210	qaA	Ser	Gln	Ser	Ser 215	Ser	Ser	Gly	Pro	Arg 220	Lys	His	Leu	Arg
Thr 225	Asp	Ala	Phe	Ser	Gln 230	His	His	Leu	Glu	Pro 235	Leu	Glu	Cys	Pro	Phe 240
Glu	Arg	Gln	His	Tyr 245	Pro	Glu	Ala	Tyr	Ala 250	Ser	Pro	Ser	His	Thr 255	Lys
Gly	Glu	Gln	Gly 260	Leu	Tyr	Pro	Leu	Pro 265	Leu	Leu	Asn	Ser	Thr 270	Leu	Asp
qaA	Gly	Lys 275	Ala	Thr	Leu	Thr	Pro 280	Ser	Asn	Thr	Pro	Leu 285	Gly	Arg	Asn
Leu	Ser 290	Thr	His	Gln	Thr	Tyr 295	Pro	Val.	Val	Ala	4sp	Pro	His	Ser	Pro
Leu 305	Ala	Ile	Lys	Gln	Glu 310	Thr	Pro	Glu	Val	Ser 315	Ser	Ser	Ser	Ser	Thr 320
Pro	Cys	Ser	Leu	Ser 325	Ser	Ser	Ala	Leu	Leu 330	Asp	Leu	Gln	Gln	Val 335	Gly
	-		Pro 340					345					350		-
Gly	Gln	Phe 355	Thr	Gly	Gln	Ala	Leu 360	Leu	Ser	Gly	Arg	Glu 365	Met	Val	Gly
Pro	Thr 370	Leu	Pro	Gly	Tyr	Pro 375	Pro	His	Ile	Pro	Thr 380	Ser	Gly	Gln	Gly





Ser 385	Tyr	Ala	Ser	Ser	Ala 390	Ile	Ala	Gly	Met	Val 395	Ala	Gly	Ser	Glu	Tyr 400	
	Gly	Asn	Ala	Tyr 405		His	Thr	Pro	Tyr 410	-	Ser	Tyr	Ser	Glu 415		
Trp	Gly	Phe	Pro 420	Asn	Ser	Ser	Leu	Leu 425	Ser	Ser	Pro	Tyr	Tyr 430	Tyr	Ser	
Ser	Thr	Ser 435	Arg	Pro	Ser	Ala	Pro 440	Pro	Thr	Thr	Ala	Thr 445	Ala	Phe	qaA	
His	Leu 450															
		210> 211>		Ł												
		212> 213>		o Sar	piens	3										
		220> 221>	ana													
		222>		3)	. (160	9)										
ccga		100> cac o		ggcgg	ga at	tgad	cgtto	g gto	cttgi	cgg	cago	gaga	cag (	cacca	atggtg	60
		-						_	_	_	-	_			ggcttg cg acc	120 178
															∍t Thr L	
_	_	_		_ ~		_								atc Ile	_	226
		5					10					15	1			
														gat Asp		274
	20					25					30					
Lys					Val	_			-	Ile				cat His	Tyr	322
35	an a	2++	aaa	++-	40	2012	202	ast	aa.	45 ata	at t	aas	gat.	tag	50	370
_	_					-				_	-			tac Tyr 65		370
tat	qac	ctg	aaa		caa	gag	tac	caa		qca	atc	aaa	gtg	gag	cct	418
	_								_					Glu		
														aag		466
Ala	Ser	Pro 85	Pro	Tyr	Tyr	Ser	Glu 90	Lys	Thr	Gln	Leu	Tyr 95	Asn	Lys	Pro	
	_	_						_	_			_	-	gtc Val	_	514
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_	aag Lys										_				_	610
_	tgt Cys				_						_	_			_	658
	tac Tyr				_											706
-	atc Ile 180						-	_	_		_		_	_	_	754
	gag Glu			-	_		_	_	_						_	802
	cgt Arg	_	_	_	_			_		_				_		850
	ccg Pro	_			_								_	_		898
	gac Asp															946
	gaa Glu 260	_										-	_	-		994
	aaa Lys															1042
	gag Glu															1090
	gta Val															1138
	cac His			Ile			_	_	_		_	_			_	1186
aaa	gtt	ctc	ata	tcc	gag	ggc	caa	ggc	ttc	atg	aca	agg	gag	ttt	cta	1234



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Ile Phe Ile A	9	2 22 2	cgc cca ggt ttg ctg Arg Pro Gly Leu Leu 400	1378
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			tca cag ctg ttt gcc Ser Gln Leu Phe Ala 430	1474
			att gtc acg gaa cac Ile Val Thr Glu His 450	1522
			aca gac atg agt ctt Thr Asp Met Ser Leu 465	1570
His Pro Leu Le	etg cag gag atc t eu Gln Glu Ile T .70		tac tag cagagagtcc Tyr *	1619
taagaaattt ac	tgtgaaaa agcgttt ttataaag acacatt	taa aaagaaaagg	tctgagggaa aatctgacca gtttagaata tgatctattt taatattaaa aattaccata	1679 1739 1799 1811
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35	4	Ł O	45 Pro Val Val Ala Asp	

55 .

Tyr Lys Tyr Asp Leu Lys Leu Gln Glu Tyr Gln Ser Ala Ile Lys Val





Glu Pro Ala Ser Pro Pro Tyr Tyr Ser Glu Lys Thr Gln Leu Tyr Asn 85 90 Lys Pro His Glu Glu Pro Ser Asn Ser Leu Met Ala Ile Glu Cys Arg 100 105 Val Cys Gly Asp Lys Ala Ser Gly Phe His Tyr Gly Val His Ala Cys 120 Glu Gly Cys Lys Gly Phe Phe Arg Arg Thr Ile Arg Leu Lys Leu Ile 135 Tyr Asp Arg Cys Asp Leu Asn Cys Arg Ile His Lys Lys Ser Arg Asn 150 155 Lys Cys Gln Tyr Cys Arg Phe Gln Lys Cys Leu Ala Val Gly Met Ser 170 His Asn Ala Ile Arg Phe Gly Arg Ile Ala Gln Ala Glu Lys Glu Lys 185 180 Leu Leu Ala Glu Ile Ser Ser Asp Ile Asp Gln Leu Asn Pro Glu Ser 200 Ala Asp Leu Arg Gln Ala Leu Ala Lys His Leu Tyr Asp Ser Tyr Ile 215 220 Lys Ser Phe Pro Leu Thr Lys Ala Lys Ala Arg Ala Ile Leu Thr Gly 230 235 Lys Thr Thr Asp Lys Ser Pro Phe Val Ile Tyr Asp Met Asn Ser Leu 250 245 Met Met Gly Glu Asp Lys Ile Lys Phe Lys His Ile Thr Pro Leu Gln 265 Glu Gln Ser Lys Glu Val Ala Ile Arg Ile Phe Gln Gly Cys Gln Phe 280 285 Arg Ser Val Glu Ala Val Glu Glu Ile Thr Glu Tyr Ala Lys Ser Ile 295 300 Pro Gly Phe Val Asn Leu Asp Leu Asn Asp Gln Val Thr Leu Leu Lys 315 310 Tyr Gly Val His Glu Ile Ile Tyr Thr Met Leu Ala Ser Leu Met Asn 325 330 Lys Asp Gly Val Leu Ile Ser Glu Gly Gln Gly Phe Met Thr Arg Glu 340 345 Phe Leu Lys Ser Leu Arg Lys Pro Phe Gly Asp Phe Met Glu Pro Lys 360 Phe Glu Phe Ala Val Lys Phe Asn Ala Leu Glu Leu Asp Asp Ser Asp 375 380 Leu Ala Ile Phe Ile Ala Val Ile Ile Leu Ser Gly Asp Arg Pro Gly 390 Leu Leu Asn Val Lys Pro Ile Glu Asp Ile Gln Asp Asn Leu Leu Gln 410 405 Ala Leu Glu Leu Gln Leu Lys Leu Asn His Pro Glu Ser Ser Gln Leu 425 Phe Ala Lys Leu Leu Gln Lys Met Thr Asp Leu Arg Gln Ile Val Thr 440 435 Glu His Val Gln Leu Leu Gln Val Ile Lys Lys Thr Glu Thr Asp Met 455 Ser Leu His Pro Leu Leu Gln Glu Ile Tyr Lys Asp Leu Tyr 475 470

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ttc act gat aca ctg tct gca aac ata tca caa gaa nat cct cac tca
                                                                         96
ecc tte gee ata aag cag gaa ace eee gag gtg tee agt tet age tee
                                                                        144
acc cct tcc tct tta tct agc tcc gcc ttt ttg gat ctg cag caa gtc
                                                                        192
gge tee ggg gte eeg eee tte aat gee ttt eee eat get gee tee gtg
                                                                        240
tac ggg cag ttc acg ggc cag gcc ctc ctc tca ggg cga gag atg gtg
                                                                        288
ggg ccc acg ctg ccc gga tac cca ccc cac atc ccc acc agc gga cag
                                                                        336
ggc agc tat gcc tcc tct gcc atc gca ggc atg gtg gca gga agt gaa
                                                                        384
tac tot gge aat gee tat gge cac ace eec tac tee tee tac age gag
                                                                        432
ged tgg ege tte eee aac tee age ttg etg agt tee eea tat tat tac
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agt too aca toa agg cog agt goa cog coc acc act goo acg goo ttt
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                                                                        537
gac cat ctg
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ccaccccaca tccccaccag cggacagggc agctatgcct cctctgccat cgcaggcatg
                                                                         180
                                                                         240
gtggcaggaa gtgaatactc tggcaatgcc tatggccaca ccccctactc ctcctacagc
                                                                         300
gaggeetgge getteeceaa etecagettg etgagtteec catattatta eagtteeaca
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Phe	Thr	Asp	Thr 20	Leu	Ser	Ala	Asn	Ile 25	Ser	Gln	Glu	Xaa	Pro 30	His	Ser
Pro	Phe	Ala	Ile	Lys	Gln	Glu	Thr	Pro	Glu	Val	Ser	Ser	Ser	Ser	Ser
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Thr	Pro 50	Ser	Ser	Leu	Ser	Ser 55	Ser	Ala	Phe	Leu	Asp 60	Leu	Gln	Gln	Val
${\tt Gly}$	Ser	Gly	Val	Pro	Pro	Phe	Asn	Ala	Phe	Pro	His	Ala	Ala	Ser	Val
65					70					75					80
Tyr	Gly	Gln	Phe	Thr 85	Gly	Gln	Ala	Leu	Leu 90	Ser	Gly	Arg	Glu	Met 95	Val
Gly	Pro	Thr	Leu	Pro	Gly	Tyr	Pro		His	Ile	Pro	Thr		Gly	Gln
_			100					105	<b>*•</b>				110	_	7
Gly	Ser	_	Ala	Ser	Ser	Ala		Ala	GГУ	Met	Val		GLY	Ser	Glu
	_	115			_	4.5	120		_	_	_	125			~7
_	130	_	Asn		_	135					140				
	Trp	Arg	Phe	Pro		Ser	Ser	Leu	Leu		Ser	Pro	Tyr	Tyr	-
145					150			_	_,	155					160
Ser	Ser	Thr	Ser	Arg 165	Pro	Ala	Pro	Pro	Thr 170	Thr	Ala	Thr	Ala	Phe 175	Asp
His	Leu														
	_,	210>	40												
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		212>													
			Homo	o Sar	piens	3									
		220>													
			Unkı	دىيىن د											
			(29)		(29)										
			Xaa			nino	acia	4							
	<.4	44J2	naa	– aı	ıy at		uci								
	< 4	400>	40												
Met			Thr	Leu	Gly	Asp	Ser	Pro	Ile	Asp	Pro	Glu	Ser	Asp	Ser
1				5	**				10					15	
Dha	TIL 10	7 070	Thr	T 011	Cox	777	7\ am	T10	Car	Cllm	C7.,	Vaa	7\ 200	$C^{-1}$ 11	Mat

Phe Thr Asp Thr Leu Ser Ala Asn Ile Ser Gln Glu Xaa Arg Glu Met





- 45 -

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Val Gly Pro Thr Leu Pro Gly Tyr Pro Pro His Ile Pro Thr Ser Gly
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                                                 45
Gln Gly Ser Tyr Ala Ser Ser Ala Ile Ala Gly Met Val Ala Gly Ser
                        55
Glu Tyr Ser Gly Asn Ala Tyr Gly His Thr Pro Tyr Ser Ser Tyr Ser
                                         75
Glu Ala Trp Arg Phe Pro Asn Ser Ser Leu Leu Ser Ser Pro Tyr Tyr
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Tyr Ser Ser Thr Ser Arg Pro Ser Ala Pro Pro Thr Thr Ala Thr Ala
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                                105
Phe Asp His Leu
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Phe Thr Asp Thr Leu Ser Ala Asn Ile Ser Gln Glu Xaa Ser Glu Tyr
            20
                                 25
Ser Gly Asn Ala Tyr Gly His Thr Pro Tyr Ser Ser Tyr Ser Glu Ala
                             40
Trp Arg Phe Pro Asn Ser Ser Leu Leu Ser Ser Pro Tyr Tyr Tyr Ser
                        55
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Ser Thr Ser Arg Pro Ser Ala Pro Pro Thr Thr Ala Thr Ala Phe Asp
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His Leu
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      <223> Xaa = any amino acid
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Ser Ala Asn Ile Ser Gln Glu Xaa Pro His Ser Pro Phe Ala
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      <212> DNA
      <213> Homo Sapiens
      <220>
      <221> Unknown
      <222> (22)...(22)
      <223> n = A or T or C or G or other
      <221> CDS
      <222> (1)...(43)
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                                                                        43
tct gca aac ata tca caa gaa ngg cga gag atg gtg ggg ccc a
Ser Ala Asn Ile Ser Gln Glu Xaa Arg Glu Met Val Gly Pro
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      <211> 14
      <212> PRT
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      <221> Unknown
      <222> (8)...(8)
      <223> Xaa = any amino acid
      <400> 45
Ser Ala Asn Ile Ser Gln Glu Xaa Arg Glu Met Val Gly Pro
 1
      <210> 46
      <211> 43
      <212> DNA
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      <221> Unknown
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<223> n = a or T or C or G or other

<221> CDS

<222> (1)...(43)

<400> 46

tct gca aac ata tca caa gaa nga agt gaa tac tct ggc aat g Ser Ala Asn Ile Ser Gln Glu Xaa Ser Glu Tyr Ser Gly Asn 1 5 10 43

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